

Science News-Letter

The Weekly Summary of Current Science

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ARCHAEOLOGY

New Finds Shed Light on Origin of Alphabet



A sample of writing from Glozel, said by some scientists to be evidence that prehistoric Europeans had an alphabet. Others say it is old Latin. Can you read it?

By EMILY C. DAVIS

Did Stone Age men in France have the brains and the background to evolve an alphabet? Some French scientists, who have been studying evidence dug up in a field at the French village of Glozel, believe that Stone Age men in France could and did make an alphabet long before the Phoenicians, or the Egyptians, or the Semites thought of using one.

If it is so, our patronizing way of emphasizing the crudeness of our Stone Age ancestors may be somewhat unnecessary. It has regularly been conceded that the first alphabet system of recording events came out of the east, and that it was a product of civilized men. The most daring students of the history of the alphabet have placed its origin at 2000 B. C., a date which many scholars regard as several centuries too ancient.

But out of the soil in this field at

Glozel have come small tablets of clay with rows of cryptic signs on them. From studying the appearance of the tablets, the layer of earth in which they were buried, and the objects of ancient appearance found in connection with them, some French scientists are convinced that by 4000 B. C. prehistoric France had an alphabet system to give the world, even though that enterprising Stone Age civilization apparently vanished so completely that centuries later the people of France and Spain had to be taught the writing of the Greeks.

This is a startling and revolutionary theory. But the remarkable collection of objects dug up at Glozel seems to call for startling pronouncements of one sort or another from French scientists, even from those who do not believe that prehistoric France can claim credit for discovering the alphabet. Few archaeological discoveries have aroused so much controversy in France, or have brought out so many decided and conflicting explanations, as the Glozel find.

The story of Glozel is in fact like a continued story of a prehistoric mystery, with a dozen French scientists playing the role of Sherlock Holmes, going down to the ploughed field where the evidence was unearthed, examining each fragment of pottery and primitive weapon, and trying to piece together from it all the true story of what happened in this quiet spot hundreds or perhaps thousands of years ago.

Every few weeks some French savant comes out with new light on the subject. The collection of tools, pottery, and cryptic writings found at Glozel has been enthusiastically termed the greatest discovery from prehistoric France in the past century of many important discoveries. Another expert, dealing equally in superlatives, says the whole thing is a huge and remarkable fake. Its age has been

dated by various experts at the distant period of 4000 B. C. and at the recent time of 300 A. D.

The modern history of the village of Glozel began, so far as the world in general is concerned, just three years ago, when Emile Fradin, a resident of the neighborhood, was ploughing up a field by a stream, on a spring day. His ploughshare struck two small strange looking pieces of brick. M. Fradin was curious. He dug for more strange objects, and he unearthed a number of broken bits of pottery and then a little tablet of clay marked with a kind of writing which he could not read.

These peculiar articles, which suggested that men had long ago occupied the site, came to the attention of Dr. A. Morlet, an archaeologist of the town of Vichy. Eventually the two began to explore the land in more systematic fashion.

The result is a collection of stone axes, spearheads, clay lamps, cleverly

(Just turn the page)



A riddle of Glozel—a mysterious death's head vase carved in clay.

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New Light on Alphabet

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shaped vases like gaunt death's heads, pebbles with pictures scratched into them, and clay bricks with more of the unreadable writings, all in such profusion that visitors to the collection have said, "Why, it's a museum in itself."

With this unlabeled and undated "museum" about him, Dr. Morlet began the first attempt to unravel the past of Glozel. One of the most surprising and puzzling exhibits was a flat pebble on which was engraved a picture of an animal with branching horns. If this is meant for a reindeer, and Dr. Morlet concluded that it is, then the artist who scratched the outline of the picture must have seen reindeer about him. Now, reindeer were plentiful in France during thousands of years of the Old Stone Age, when Europe was cold from the glaciers which crept down from the north. When the ice finally retreated to the mountain tops and to the Arctic regions, the reindeer and other heavily-coated animals found the climate of France too warm for their liking and they too retreated northward. So this reindeer picture, if it is indeed a reindeer, would mean that the people of Glozel were decidedly prehistoric, dating back to the end of the Old Stone Age or the beginning of the New Stone Age.

Turning to the tablets of clay, Dr. Morlet found over 80 different characters on them, crosses, bars, circles, angles, used over and over. He declared that these must represent an early form of writing, before it was simplified down to a comparatively small set of letters, such as the Phoenicians had. He pointed out that some of these same signs used on the tablets were cut on harpoons and pebbles bearing pictures of animals, and all reminiscent of the late Paleolithic Age.

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News-Letter Features

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American Medical Association Meets in Washington

On this page are reported some of the more important and interesting papers presented by physicians from all parts of the country at the meeting of the American Medical Association in Washington, May 16 to 20, 1927.

Most Doctors in U. S.

The United States has more doctors than any other country, with 133 physicians to every 100,000 persons, Dr. Arthur Dean Bevan, of Chicago, told his colleagues. Reports from all fields of medical activity were presented to the House of Delegates of the Association today prior to the opening of the scientific session later in the week.

Great Britain has 92 physicians per 100,000 people, Dr. Bevan stated, while Germany has only 51. France lags behind with 35.

The increasing demand of people everywhere for periodic physical examinations by their physician is a significant indicator of the trend of public opinion toward preventive medicine, according to Dr. Olin West, of Chicago, secretary of the Association. Eleven state medical associations and 120 county associations have adopted a plan proposed by the Association a year ago whereby co-operation with the Red Cross makes medical relief immediately available in times of disaster, Dr. West reported.

The efforts of the medical profession to abolish quacks and non-medically qualified healers has found expression in a basic science act drafted by the bureau of legal medicine and legislation. Two states, Wisconsin and Connecticut, have passed such laws, it was stated, requiring all those who apply for permission to practice healing the sick to demonstrate their knowledge of fundamental branches of medicine.

Scores Liquor Restriction

Characterizing the statement on the back of the Volstead prescription book as an insult to an honorable profession, Dr. Wendell C. Phillips, retiring president of the American Medical Association, rapped recent restrictions in the use of medicinal liquors.

In his address to the House of Delegates at the opening of the annual meetings of the Association, Dr. Phillips called the attention of the Medical profession to a recent decision of the Supreme Court supporting the action of Congress to secure the enforcement of the Eighteenth

Amendment that "arrogated to itself (Congress) the functions of the medical profession and the pharmacologist."

Medical men feel that there is active danger in legislation designed to regulate the practice of the art of healing which will place the mere opinion of untrained men and women on a par with the findings of impersonal research. Such a condition, he affirmed, whereby instances may arise when the fiat of Congress may be in direct opposition to the trained judgment of a physician, holds a serious threat to public health.

Dr. Phillips exhorted fellow physicians to put up a united front on this important subject. The House of Delegates of the American Medical Association has expressed its disapproval in the past, he said, of those portions of the Volstead Act which interfere with the proper relation between the physician and his patient in prescribing alcohol medicinally.

"Individual opinions may vary; but individual opinions and convictions should not have a place or be given publicly, as representing the majority opinion of the members of the American medical profession in connection with this matter," he declared.

Preventive medicine, not as a matter of sentiment but of sound business, was another measure urged by the medical leader. The public, which really pays the bills, he said, must be convinced that the medical profession is worthy of its trust as the initiators of a policy of disease prevention that will require, if it is to be effective, the expenditure of many millions of dollars.

"The medical profession," he stated, "should throw off its mask of reticence and its shrinking attitude toward reasonable publicity concerning health education. Professional policies narrowly conceived can never successfully oppose the rightful interest of the public. It is time to strike the shackles not only from the shrinking attitude of the medical profession toward the public espousal of educational programs but also from its attitude toward the lay press, the radio and great assemblies of truth-seeking people. The physician has no right to conceal from non-medical readers the great body of news of the highest importance which is his to communicate."

Tonsils and Heart Disease

Ways and means of bringing down the toll of heart disease, responsible for one-fifth of all the adult deaths in the United States, held the attention of many specialists at the recent meeting of the American Medical Association.

Dr. Paul B. White, of Boston, stated that relaxation from strain and regular habits of living were of prime importance in the treatment of this disease. Rest was held to be essential for disturbances of the heart associated with goiter. Effective rehabilitation has been accomplished in many moderately severe cases of rheumatic heart disease, according to Dr. L. A. Conner, of New York. The development of special classes of vocational guidance, employment bureaus and convalescent homes were considered as possible means of helping people overcome the handicap of this malady.

Heart disease occurs much less frequently in children who have had their tonsils removed than in those who have not, Dr. A. D. Kaiser, of Rochester, N. Y., reported as his conclusion from a study of 50,000 school children. The results of this investigation show that the child who has had his tonsils removed is less likely to succumb to rheumatism and scarlet fever as well, Dr. Kaiser declared.

More deaths from heart disease is one of the penalties people are paying for the increased span of life achieved in the past thirty years, Dr. Henry Albert, health commissioner of Iowa, declared at the meeting. One hitherto unconsidered reason for the prevalence of heart disease, which outranks all other causes of death in the United States, is the survival of larger numbers of people from the attacks of infectious diseases, he maintained.

Scarlet fever, rheumatic fever and venereal disease have all been brought more or less under control in recent years, but they leave behind them a constitution weakened in various ways. The injury sustained by a person who has had scarlet fever may not be apparent for twenty years, said Dr. Albert, when it may reveal itself as a disease of the heart, liver, or other organs. About 25 per cent. of all deaths from heart disease have their origin in rheumatism and more are being maimed by its effects than there were twenty years ago, he stated.

(Just turn the page)

Medical Meeting

(Continued from page 319)

The prevalence of these two diseases is practically the same as it has been in the last two decades, but the death rate has been materially reduced. This leaves an increasing proportion of the population in a condition likely to develop heart disease when the "heart disease age" of forty-five plus is attained, Dr. Albert pointed out.

Cough Cause Sought

An attempt has been made to locate the real reason for the chronic cough.

Drs. W. C. Voorsanger and Fred Fireston, of San Francisco, have reported results from a detailed analysis of 200 patients with coughs.

Since a chronic cough is one of the guide posts pointing to tuberculosis, its presence has led to many diagnoses of this disease that recent investigations have shown to be erroneous, Dr. Voorsanger stated. None of the symptoms of his 200 patients were found to be due to active tuberculosis, though in many cases their condition has been attributed to this cause.

Some 37 per cent. of the cases were found to be suffering from infectious bronchitis and asthma following influenza and pneumonia. In 32 per cent. the cause was not determined, while a variety of afflictions of the throat and lungs accounted for coughs of the remainder.

The condition termed "infectious bronchitis and asthma" is so prevalent, Dr. Voorsanger stated, that it has been called "pseudo-tuberculosis." X-rays are the principal aid in distinguishing this disease from real tuberculosis.

Since a certain proportion of the people with undiagnosed coughs may become tuberculous, he added, active T. B. should be forestalled in such cases by correct living and careful treatment.

Broken Bones

"Splint 'em where they lie" is the slogan Dr. Kellogg Speed, of Chicago, says surgeons should adopt. Treatment of fractures should be immediate before the patient reaches the hospital, he told the Association.

X-ray examination of broken bones is imperative both as an aid to diagnosis and from a medicolegal standpoint, he pointed out, because it protects both the patient and the physician with a permanent record of the injury and reveals the type of fracture present.

Modern Babies Better

Is the reign of the flapper figure to be given credit for better babies? Dr. Effa V. Davis, of Chicago, reported to the section on obstetrics of the American Medical Association meeting, that where the physician's advice on diet and exercise used to be received coldly by the prospective mother, it is now welcomed. The vogue of svelte slimness has simplified the problem of the obstetrician considerably, she declared.

Hygienic modern dress has made exercise popular while the trend of modern health habits has made the young mother-to-be understand how she can help control the development of her child to a degree that will make childbirth less difficult with less risk to both herself and her baby.

Dr. Davis maintained that exercise and a balanced ration are essentials to healthy motherhood. Most of the complications of childbirth met with in her long experience, she explained, had occurred in women who gave up exercise without reducing their diet and had therefore given birth to over-sized babies.

In spite of being one of the most progressive countries, the United States still leaves much to hope for with respect to its maternal death rate. Dr. S. Josephine Baker, of Stamford, Conn., pointed out in the same section, that this country has a higher death rate for mothers in childbirth than any other except Chile. The rate is one-third higher than that of England and Wales, and more than twice as great as that of Denmark, Italy, Japan, the Netherlands, New Zealand and Sweden, she stated.

Germs in Swimming Pools

Was the old swimming hole less of a hazard than the modern sterilized pool? Although strenuous efforts are made toward sterilization of water in swimming pools infections have become so frequent in recent years that almost every family has been brought to grief in one way or another from swimming, Dr. Frederick E. Hasty, of Nashville, Tenn., stated.

The number of bacteria in public pools is often under control, he admitted, but little consideration has been given to the kind of bacteria present.

Guinea pigs inoculated with bacteria recovered from water from pools that had undergone various

processes of sterilization developed practically every bacterial type of infection of the upper respiratory tract. The severity of the guinea pig infections was found to vary in proportion to the severity of the colds prevalent in the neighborhood at that particular time.

"Water gets into the nasal chambers of most swimmers," Dr. Hasty said, "carrying with it the contamination of the pool and at the same time adding to the pool whatever bacteria may be present in the particular swimmer's nose."

"I have observed a number of boys who got sinus infection from one pool as a result of being required to duck their heads," Dr. Hasty asserted. "Without an exception the infections cleared up in the course of a few weeks after leaving off swimming. Persons who have suffered from paranasal sinus infection or nasal obstruction are likely to develop acute attacks following swimming. The high percentage of frontal and ethmoidal sinus infection is due to virulent foreign bacteria reaching the vulnerable part of the nose and to a lowered local and systemic resistance."

Diet Cures Skin Diseases

Those who vainly strive for perfect complexions should take courage. A patient with eczema for thirty-one years at last acquired a healthy skin by observing the proper diet, Dr. Francis Lowell Burnett, of Boston, told members of the Association. Another patient was cured who suffered from psoriasis, a skin disease caused by imperfect assimilation of food, for fifty-two years, he stated.

One of the commonest errors, according to Dr. Burnett, is eating too much and too fast. Too many sweets, fats, and rich food, he added, along with eating between meals, loss of sleep and insufficient exercise are other mistakes that lead to the breakdown of the structure of the skin.

Cures can be made and recurrence prevented when the patient trains himself to recognize the first signs of digestive disorder and follows the prescribed diet, the specialist declared.

Science News-Letter, May 21, 1927

Tobacco stems and waste cuttings make durable paper money, European experimenters report.

Out of the thousands of plants which might be developed as food for man, less than 200 kinds are widely used.

Trees Aid Flood Prevention

By TOM GILL

Mr. Gill is a well-known authority on forestry.

The appalling floods now raging in the lower Mississippi valley have revived the ancient issue of forests versus engineering works as means of flood prevention. Much has been claimed for the beneficent influence of forests and much denied. Here in America we lack the results of scientific experimentation either to absolutely prove or deny the importance of the forests in this role. But the older countries of the world have spent long years in the harsh school of experience in this regard. Spain, Switzerland, France and Italy for example, have suffered more than a little and the mass of experience and scientific data they have built up in regard to torrent control holds lessons for us.

There as here, foresters are substantially agreed that a forested area provides no absolute insurance against floods, yet they have found that forests play a very important part in controlling floods and in diminishing the evil effects of water at flood stages. They have found that forests actually decrease the height of streams in times of high water and increase the height in times of low water—in other words, that they tend to equalize stream flow.

But, even more important from the standpoint of flood control, they have found that without a forest cover to bind and protect the soil, other methods of flood control prove in the long run valueless.

For without the protective leaf mold that a forest gives, without the protection of the tree crowns against heavy downpours, great quantities of the earth's most fertile soil are swept down the streams, filling up catchment basins and reservoirs, raising the beds of rivers and silting up levees and irrigation ditches. Meanwhile the taxpayer continues sadly to provide the dollars to remove these tons of earth that should never have got there in the first place.

The importance of the role played by this solid material, this soil, sand and gravel, that are carried by streams at flood stage is frequently overlooked. One flood in France has been computed to have carried over two and a half times its own volume of solid matter. For every bucket of water it moved with destructive force two and a half buckets of solids. The Pueblo, Colorado, flood was 50 per

cent. earth and sand. In this way thousands of acres of fertile soil may be destroyed each year and millions of cubic feet of silt deposited in levees, river beds and reservoirs.

So France, Spain and Italy, which have spent millions in flood control, have come to make use of a combination of engineering methods and forestry. The first work on the upper streams consists of dams of stone, logs, or masonry built directly in the stream-bed. "Barrages," they are called. These barrages are placed at frequent intervals and finally form part of the bed itself. Aspen and alder cuttings are planted now to aid in holding the soil. This is followed by the main planting of pine and larch. It costs money—but so do floods, and only in this way are they able to prevent violent erosion of their upper streams on deforested slopes. "There are three ways of solving the flood problems," says P. L. Yang, a Chinese engineer. "Reforestation, barrages and reservoirs. Reforestation is the most important measure."

So there exists today a high degree of unanimity among foresters and engineers abroad in holding that the establishing of forest cover is a very necessary step, whatever method of flood control is agreed on. If we pin our faith on levees we must prevent them from silting up. If we put millions into storage reservoirs we cannot afford to fill them with mud.

Science News-Letter, May 21, 1927

GEOLOGY

No Quakes From Flood

Earthquakes and tornadoes that have occurred in and near regions stricken by the Mississippi flood would probably have occurred even if the country had not been inundated, and there is no need to fear that any severe earthquake is apt to come and further damage the levees. This is the opinion of two government experts in such matters, Dr. W. J. Humphreys, professor of meteorological physics at the U. S. Weather Bureau, and Commander N. H. Heck, in charge of the earthquake investigations of the U. S. Coast and Geodetic Survey in Washington.

"Practically all of the region now affected was severely shaken by what is known as the 'New Madrid earthquake' in 1811, so probably that relieved the strain for many, many

(Just turn the page)



EDWIN BRANT FROST

Stellar Spectroscopist

As director of the Yerkes Observatory of the University of Chicago for twenty-two years, Dr. Frost has been able not only to engage in valuable research himself, but to aid in the training of many men and women now prominent in astronomical circles. And now, though he has lost his sight, a handicap which, for an astronomer, many would believe unsurmountable, he still continues his work with unabated zeal.

It is in spectroscopy, the translation of the messages sent us from the stars over their radio waves of light, that the most important of Dr. Frost's work has been accomplished. Early in his career he translated, revised and enlarged Scheiner's classical treatise on the subject, and since then he has been applying these principles.

Born at Brantford, Vermont, on July 14, 1866, Dr. Frost graduated from Dartmouth at the age of 20. Afterwards he taught astronomy there until 1890, then served for two years as an assistant at the famous Astrophysical Observatory at Potsdam, Germany. Then he returned to his *alma mater* as an assistant professor and then professor until 1898, when the newly founded Yerkes Observatory called him. At the resignation of Dr. George E. Hale, in 1905, to found the Mt. Wilson Observatory, Dr. Frost succeeded to the directorship, the post which he still holds.

Science News-Letter, May 21, 1927

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Quakes and Flood

(Continued from page 321)

years," said Commander Heck, "but for just how many years we cannot say. However there is no more reason for believing that one will again occur in the same region than at any other time in recent years. There have been minor shocks on the average of once a year in the neighborhood, so there is no reason to believe that the recent shocks have had anything to do with the flood. It has been suggested that a suddenly increased barometric pressure, by the greater weight of the air on a large land area, might be the straw to break the camel's back, and by acting as a trigger, might set off a quake all ready to occur.

"A large mass of water over an extended territory might have a similar effect but as we have no reason to believe that the flooded area is above a place of potential earthquake danger, the flood refugees need not fear that an earthquake will add to their troubles."

A similar opinion was expressed by Dr. Humphreys, who pointed out that there was no way of telling whether the greater weight of the water would lessen or increase the strain. Also, he said, tornadoes are caused by conditions quite unrelated to those that result in the floods, and there is no especially great danger of these twisters in the inundated country.

Science News-Letter, May 21, 1927

EVOLUTION—CORRECTION

Was First Man an American?

Under the above head in SCIENCE NEWS-LETTER, XI, 296, May 7, 1927, describing the discovery of fossilized implements in Nebraska by Dr. Henry Fairfield Osborn, president of the American Museum of Natural History, it was stated that the implements are "described by Dr. Osborn as of undoubtedly human origin." To more accurately convey Dr. Osborn's evaluation of the find, the implements should be described as of "apparent or possible human origin." The original article further stated that: "Dr. Osborn declared that the fossilized bone specimens must be studied by others before it will be safe to definitely assign them a human origin."

Science News-Letter, May 21, 1927

A six-story playground is to be constructed in downtown New York.

Why automobile engines are hard to start in cold weather is being studied by government scientists.

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WMAL	The Washington Radio Forum, Washington, D. C.
WMAQ	Chicago Daily News, Chicago, Ill.
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New Light on Alphabet

(Continued from page 318)

So, altogether, he concluded, the people who did the writing must have lived at the transition between the Old and New Stone Ages. He said that, instead of writing being a comparatively late creation of man, these prehistoric people must have devised a way of making signs stand for sounds about the same time that they learned to harden their pottery in fire.

Dr. Morlet's deductions at once aroused interest and curiosity. French scientists, many of them skeptics, began journeying to the Glozel field to investigate this reported archaeological treasure trove. Time after time, at the invitation of Dr. Morlet, one of these French scholars has selected his own site to dig in. He has been given a spade and has proceeded to make or direct an excavation for himself.

Those who suspected the whole discovery to be a "plant" with faked antiquities went to work critically looking for signs of deception. Most of them lost their skepticism when they cut through roots of grass and trees, indicating that the surface had not been recently disturbed, when they saw bricks with roots of plants growing into them, and when they

unearthed for themselves all sorts of clay, stone, and bone articles of the sort associated with prehistoric men. If this was a fake, and this profusion of objects was hidden long before, then an enormous amount of labor was expended in the "planting."

Besides making sample excavations, the visiting scientists have studied the collection which Dr. Morlet and other excavators have amassed. And they have gone away finally to write their opinions on the subjects in which they specialize—ancient writing, geology, prehistoric man, or Roman antiquities.

Some of them agree with Dr. Morlet that there were Stone Age men at Glozel.

Most of them agree that the Glozel field in ancient times was not a place where people lived and cooked and had their homes, but a place where mystic or sacred rites were performed.

"A very curious point that I have confirmed with my own eyes," said Dr. Salomon Reinach, a noted French archaeologist, recently, "is that the objects in bone, stone, or clay are not accumulated or tossed in disorder, but are placed in rows horizontally or vertically. It is as if a sacred place near a stream had been respected through a number of generations, left

as it was and gradually covered up by thin layers of earth."

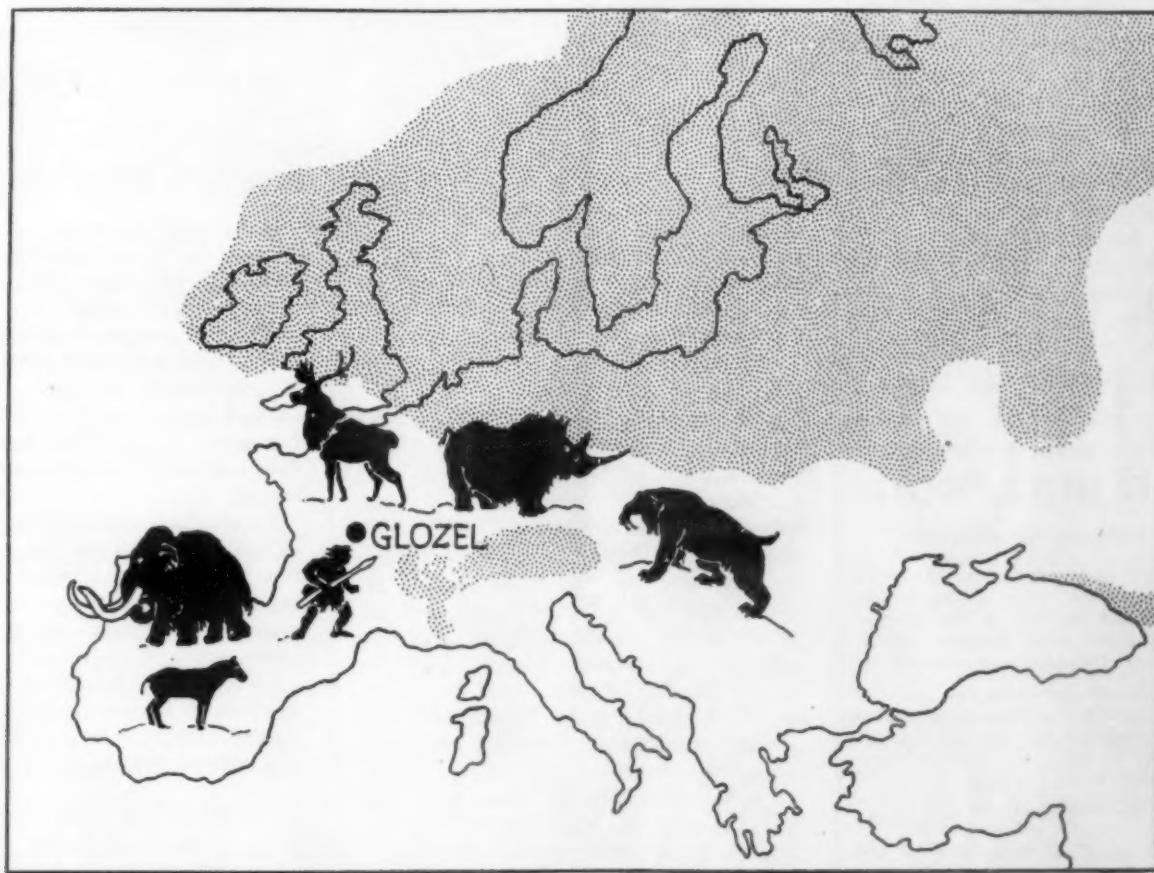
One kind of article which especially suggests this sacred character is the death's head vase. The excavations have revealed a number of these clay vases carved to show hollow eyes, heavy eyebrow ridges, short nose bones, but strangely enough with no sign of teeth or mouth.

"These vases show a top surface rounded off in the form of a skull and with an opening too little to serve for daily use," Dr. Morlet says. "It seems likely that the tribes of Glozel, struck by the change in their dead, the head becoming a bony skull, may have tried to reproduce this to characterize their burial pottery."

Primitive men must have noticed that an outstanding change in the dead person was that he could not talk. So these funeral vases were made without mouths, Dr. Morlet believes, to represent the "great silence."

Later, he says, the Stone Age artists must have gone farther and allowed themselves to represent the living, since some of the clay vases have an imposing lock of hair standing up on the forehead, or a sort of ear on the side like a sugar bowl handle.

(Just turn the page)



The ice sheet which crept down upon Europe 100,000 years ago, and some of the animals familiar to Old Stone Age Men and Women.

New Light on Alphabet

(Continued from page 323)

Some of the scientists have tried to explain the writings on the Glozel tablets by showing that these people were not primitive Stone Age individuals after all.

Dr. Marcel Baudouin, for example, believes that, even though no trace of metal tools has been found, the people who carved the cryptic little tablets must have had metal to work with. In his opinion the field is not a resting place for Stone Age men, but of the more advanced Age of Bronze. He fits the reindeer into the puzzle by saying that perhaps the Age of Bronze in this part of Europe might go back to 5000 B. C., which would bring it, in his opinion, back to a time near the close of the reindeer era.

Quite a different story is read in the clay and rock objects by M. Camille Jullian, an expert on Roman antiquities. M. Jullian has declared that some of the Glozel discoveries are ancient, but that the alphabetic writings date back only to the Roman Empire.

In the time of Rome, sorcerers held their magic rites in groves, and sometimes they used prehistoric relics as fetishes and charms. The mysterious tablets, he says, might thus be incantations written in cursive Latin by some expert in black magic. If the writing is indeed Latin, it might be deciphered. But so far no one has done more than to suggest possible meanings for a few separate signs or words.

M. Jullian believes that the death's head vases were not funeral jars, but fetishes, designed without mouths to aid in some charm whereby an individual would be bereft of speech.

Another archaeologist, M. Esperandieu, disagrees with this theory of

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DAYS OF ANCIENT MAN

Age	Character	Estimated Beginning	Climate
Eolithic (Dawn of Stone Age)	Crudest stone implements	1,000,000 B. C.	Pre-glacial
Paleolithic (Old Stone Age)	Unpolished stone tools and weapons	100,000 B. C.	Alternating glacial and mild
Neolithic (New Stone Age)	Stone implements carefully shaped and polished	10,000 B. C.	Post-glacial
Bronze	First use of metal	3,000 B. C.	Modern
Iron	Iron began to supersede bronze	1,300 B. C.	Modern

Estimates by different scientists on the length of prehistoric ages vary considerably. The dates given here are widely used.

early and late objects being combined. He admits that "examples are not lacking of this custom of devotees taking curious objects to the sanctuary of a witch," but he points out that "the number of these curiosities is ordinarily very small compared to the real votive objects of the time, while at Glozel the ancient-looking objects are in the majority.

"One can imagine that a polished axe, pebbles of particular form, might have struck the imagination of primitive people and caused them to make of these objects offerings to a god or even to a sorcerer. But it seems to be entirely unlikely that the harpoons, the rings of slate, bone pins, and such things, where the workmanship of man is clearly shown—and on which in addition are alphabetic designs that are found again on the clay tablets—could have been regarded as wonders of nature and could have been used as votive offerings. With M. Salomon Reinach, M. l'abbe Breuil, and Dr. Morlet, I believe that the tablets of clay from Glozel are Neolithic like the rest. "But," adds M. Esperandieu cautiously, "to what date they belong, I do not state."

This scientist sees nothing incongruous in the thought of primitive Europeans evolving a system of recording events. Why not admit, he asks, that men who were intellectual enough and artistic enough to make the pictures of animals found at Glozel and other Stone Age stations, might have had the idea of expressing sounds with written signs?

Still another expert, Mr. Seymour de Ricci, who visited Glozel and observed excavations, found the place quite too remarkable.

"I will not conceal from you," he told Dr. Morlet, "that apart from the fragments of stone, and perhaps—though I am not sure—a piece of polished axe, all the rest is a fake."

The savants generally agree that some, at least, of the relics are old and genuine, but they are far apart on how the objects all came together here. American anthropologists who will spend their vacations in Europe are expected to take a look at the ploughed field and try their hands at guessing the riddle of Glozel.

Science News-Letter, May 21, 1927

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EVOLUTION

All Are Evolutionists

Fundamentalists are evolutionists at heart, only they have not thought the thing through, asserted Professor H. C. Cowles, of the University of Chicago, in a lecture at the New York Botanical Garden. "Most fundamentalists believe that the various divisions of the human race have come from a single pair," said Professor Cowles. "Most anthropologists likewise believe in the unity of the human race. In other words, both fundamentalists and men of science believe that all the divergences of the human race have come through evolution since the time when man could first be recognized as such."

"Such differences as are found between the yellow, red, white and black races have come through evolution and not through special creation. One may recognize in the white race great differences between the Germans, Italians, Irish and French. One may even recognize differences in different parts of the United States. One may often distinguish a man from the south or a man from the east or north. Such differences are not due to special creation, but are due to evolution."

"In a sense, the fundamentalists may be regarded as more ardent evolutionists than are the men of science, since fundamentalists think of these great changes as having been brought about in less than 6,000 years, whereas the men of science regard such changes as requiring a vastly longer time."

Science News-Letter, May 21, 1927

ARCHÆOLOGY

Revive New Year Ceremony

Young Mexicans in the Valley of Mexico celebrated the old Aztec New Year on May 17, according Mrs. Zelia Nuttal, well-known authority on Mexican archaeology, who is now at Coyacan.

The Maya, Aztecs, and other ancient inhabitants of the American tropics watched the sun for a simple and accurate sign to tell them when to begin a new year, Mrs. Nuttal's archaeological investigations indicate. When the sun passed through the zenith and stood directly overhead, the strange phenomenon of vertical objects casting no shadow occurred just at noon. The astronomer priests, watching vertical posts or altars, then announced to the people that the Sun-god had descended from heaven. This "descent of the god" was important, Mrs. Nuttal explains, be-

cause the heat of the vertical solar rays brought rains to the country, and the farmers knew that the time had come to plant their maize and other food crops.

This year, in the patios and gardens of many Mexican schools, a pole will be erected and the children will watch the striking sight of the vanishing solar shadow.

Mrs. Nuttal has advocated that the celebration of the historic event should not only be a patriotic one, but that the children should exchange gifts consisting only of flowers and natural curiosities, thus perpetuating the keen observation of nature of the old inhabitants of their country.

Science News-Letter, May 21, 1927

PSYCHOLOGY

Geniuses Husky

You do not have to be sick to be a great musician, says Dr. James F. Rogers, hygienist of the U. S. Bureau of Education, who has made a statistical study of the lives and health of several hundred musicians of the period between 1700 and 1900 to prove his point.

The idea that genius, musical or otherwise, inhabits an unsound mind and a crazy body has been knocked into a cocked hat, this writer declares. "There is a common belief that great men are abnormal in both body and mind, but nothing is further from fact," said Dr. Rogers. "The great man as a rule is of superior physique and vigor, and the greater the man of genius he is, the more regard he has for the physical foundation upon which his work depends."

For every delicate and sickly Keats or Chopin or Stevenson, there are many such robust specimens as Goethe, Browning and Rubinstein. And such physical giants as Handel, Bach, Brahms and Beethoven are first among great musicians. Wagner stood on his head at 60 for the sheer joy of showing off to his friends, and the musician Brahms was never sick in his life, and could sleep anywhere, any time and any place he pleased.

Many peculiar beliefs have been current as to the mental and physical effects upon the musician of the music he produced and the instrument he played, Dr. Rogers said. Music has often been recommended as a cure for various bodily and mental ills, and has been applied medicinally in institutions and clinics for the mentally maimed. Whether or not the musician himself was remarkably benefited by the magic powers of his

own music or whether he was injured, like the manipulator of X-rays from an overdose of this remedy, has often been asked. These questions and whether or not the musician is subject to occupational diseases incidental to the production of music, Dr. Rogers has attempted to answer by his statistical inquiry.

The old idea that performers on wind instruments are especially subject to tuberculosis is unfounded, he says, as well as that these performers are liable to injure their lungs. The general average length of life for the trumpet and cornet players he found was 69.1 years, and of all wind instruments these two demand the greatest lung pressure.

Clarinet, horn, bassoon, oboe and flute players live longest in the order named, Dr. Rogers found, and the group of players who develop the least pressure in the lungs, as the flutists, are the lowest on the longevity scale of wind instrument players.

The increase in longevity, however, is not to be attributed to the increase in pressure required in performance but rather to the fact that it takes a vigorous person in the first place to play a trumpet or clarinet well enough to break into the Hall of Fame.

The average length of life a century ago was only 39 years, Dr. Rogers said, as compared with about 56 years today. Therefore, all the musicians, whether they blew, scraped or pounded keys, lived to a comparatively ripe old age, for their average length of life was greater than that of the rest of the population.

The average person in the United States, in other than the musical professions, loses from 4 to 5 days a year from his work on account of illness. While there are no statistics on general groups of musicians, 11 members of the wind section of the Boston Symphony Orchestra were absent on an average but 2 times each in a total of 10 seasons. This is an absence of but four-tenths of a day per man, Dr. Rogers pointed out, and therefore these musicians seem ten times as healthy as the average of men. If this little group is representative, then orchestral performers of this class are a healthy lot.

While Dr. Rogers found no statistics for singers, he believes that these would fall in a class with the wind instrument players as singing has been recommended as a most healthful exercise and the professional cannot, like an athlete, train for the season and then fall from grace in between times.

Science News-Letter, May 21, 1927

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NATURE RAMBLINGS

By FRANK THONE



Mushrooms

With the coming of warm spring rains, our woods and fields will be showing the usual rich crops of mushrooms and tempting the epicure forth with his basket on his arm. For mushrooms, though having no food value, have such a variety of toothsome tastes that most of us reck little of the cost in collecting time and preparation labor that results in a dish of them on the table.

Many are deterred from knowing the delights of wild mushrooms because they are afraid of the poisonous species—"toadstools," they generally call them, though there is really no distinction between mushroom and toadstool, but only between non-poisonous and poisonous mushrooms. There is no easy, rule-of-thumb test for poisonous species. The blackening of a silver spoon, or the peeling of the cap, are superstitions, and dangerous to follow. One simply has to know his mushrooms, species by species.

For the guidance of the hardy amateur, and the reassurance of the timid, there are a number of good publications, mostly well illustrated, that will tell what you want to know. The U. S. Department of Agriculture has a publication, Bulletin No. 175, which the Government Printing Office sells for thirty cents, telling of the principal edible and poisonous species. Then there are a number of good books on mushrooms, of which McIlvaine and Macadam's "Toadstools, Mushrooms, Fungi, Edible and Poisonous" is perhaps to be ranked as the classic. This is a ponderous volume, containing almost 800 pages, and tells about everything known concerning mushrooms up to the date of its publication.

Science News-Letter, May 21, 1927

In a recent examination of the hearing of over 4,000 school children it was found that 575 had defective hearing unknown to either parents or teachers.

Insect Carries Plant Ill

Just as yellow fever is due to an invisibly small germ or virus carried from person to person by an insect, so are some of the most serious and destructive illnesses of plants due to invisibly small germs carried from plant to plant by an insect.

In a report to the Engineering Foundation, Dr. L. O. Kunkel, plant pathologist at the Boyce Thompson Institute for Plant Research, Yonkers, tells how a little gray insect, the aster leafhopper, spreads the yellows disease of asters by first biting sick plants and then, after the virus has had ten days to incubate in its interior, biting healthy ones and planting the infection in their tissues.

The same leafhopper that transmits yellows to the China aster also carries it to more than fifty other species of wild and cultivated plants. Lettuce is one of the most important hosts of aster yellows. On this plant it has long been known in the Southwest as the Rio Grande disease and in New York and other eastern states as the white heart disease. In the winter, yellows lives on perennial weed hosts. During the summer, when the carrier-leafhopper is very active, it spreads rapidly to susceptible annual plants such as the China aster and lettuce.

Spread of aster yellows and its host range depend largely on the likes and dislikes of the aster leafhopper. The African marigold is quite susceptible but seldom takes the disease even when grown adjacent to yellowed aster plants. The leafhopper does not like the marigold and seldom feeds upon it when other plants are available. If confined in a cage containing only marigold plants, hunger drives it to feed upon them and they readily take the disease. It is fortunate that although wheat and other cereal crops are favorite hosts of this leafhopper, they are immune to the yellows.

The aster leafhopper is thought to have been accidentally introduced into the United States from Europe fifty or more years ago. Although it is prevalent in Europe and the Orient, where the China aster is extensively grown, the aster yellows disease is known only in America. Thus, a disease which is apparently endemic in America has been rendered much more serious through the importation of a European leafhopper, and of an Oriental plant, the China aster.

No satisfactory means is known of controlling the aster leafhopper, but the yellows which it spreads can be held in check by digging out all infected perennial weed hosts in the vicinity of the field to be protected and by destroying all diseased annuals as soon as observed. A yellowed plant is a menace to nearby healthy plants just as a malaria patient is a menace to a healthy community in a region infested with the *Anopheles* mosquito.

At the same time fruit growers and consumers in this country have a new cause for worry with the announcement by the U. S. Bureau of Entomology that the Mexican fruit fly has crossed the Rio Grande and made its appearance recently in the southern tip of Texas, an important grapefruit area.

For many years the presence of this fruit pest in sections of central and southern Mexico has been a constant source of anxiety to the U. S. Department of Agriculture and was the cause of an embargo on the importation and entry from Mexico of fruits which it attacks. These fruits are oranges, grapefruit, peaches, plums, mangoes, sweet limes, guavas and achras sapotes. In certain sections of Mexico it has damaged these fruit crops forty per cent.

According to Dr. A. C. Baker, of the U. S. Bureau of Entomology, it is hard to say just what damage the insect would do in this country because it is not known how far it can adapt itself to conditions unlike its natural, somewhat tropical ones. However, the establishment of the insect in Montemorelos, Mexico, shows that it can survive in a climate where there is occasional frost.

What is to be done about its appearance in Texas will be decided after a meeting of the Federal Horticultural Board of the U. S. Department of Agriculture to be held at once.

Science News-Letter, May 21, 1927

A small sized gas mask for use by train crews and railroad yard employees has been invented.

A land entrance is planned to the famous Blue Grotto of Capri which has always been entered by water only.

Methods of toughening translucent glassware have reduced the loss from breakage from 60 per cent. to 3 per cent.

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GB	Physical geography.
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GF	Anthropogeography.
GN	Anthropology. Somatology. Ethnology. Ethnography. Prehistoric archaeology.
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QL	Zoology.
QM	Human anatomy.
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		840	French
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First Glances at New Books

ESSAYS IN POPULAR SCIENCE
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Science News-Letter, May 21, 1927

PRE-DEVONIAN SEDIMENTATION IN SOUTHERN CANADIAN ROCKY MOUNTAINS—Charles D. Walcott—*Smithsonian Misc. Coll. v. 75, No. 4*. The late secretary of the Smithsonian Institution was active, as a good scientist would want to be, up to the very end of his life. This document appears as the first of his posthumous papers.

Science News-Letter, May 21, 1927

HYGIEIA, OR DISEASE AND EVOLUTION—Burton Peter Thom—*Dutton* (\$1). A thoughtful essay on the importance of disease as an evolutionary factor, written from an ultra optimistic point of view. Dr. Thom believes that mankind will eventually outgrow disease and attain the degree of immunity which fishes and reptiles now enjoy.

Science News-Letter, May 21, 1927

IMPORTANCE OF ANIMALS IN FORESTRY—C. C. Adams—*Roosevelt Wild Life Bulletin, v. 3, no. 4*. An important feature is a census of the principal game animals, so far as available data make it possible. The tabulated summary of this is especially valuable.

Science News-Letter, May 21, 1927

Ancient Wheat Found

Wheat of a type still cultivated was grown on the plains of Mesopotamia before the days of Abraham, according to a find reported in the scientific weekly, *Nature*, by Prof. John Percival of Reading University, at Reading, Eng. The grains were found in a vase in the ruins of an ancient Sumerian house at Jamdet Nasr, seventeen miles north of Kish, by two British archeologists and sent to England for identification. The date of the ruins was estimated at 3500 B. C. Prof. Percival states that the wheat is unlike any of the types of grain discovered in Egyptian tombs of contemporary date, and closely resembles the modern variety known as Rivet wheat. Needless to say, neither this ancient Sumerian wheat nor that found in Egypt is alive or would grow if planted. No report of the growth of seeds thousands of years old has ever been authenticated.

Science News-Letter, May 21, 1927

Civilization and Casualties

Merely living in the complicated social system of today is responsible for increasing numbers of cases in the general hospital, says Dr. Groves B. Smith, neuropsychiatrist at the Henry Ford Hospital in Detroit.

Much of psychoanalysis now practised, he declared, is an attempt to obtain from patients information the old-fashioned family physician knew anyway about all of his patients just from being a member of the community.

Emotional conflicts mask in many guises, said Dr. Smith, and ill-advised medical or surgical treatment often results from failure to give such conditions sufficient consideration. The body and the mind have been looked upon as separate entities but modern research in psychiatry is beginning to show that they are often very closely connected.

The popular idea entertained by lay persons and many physicians that control of nervous symptoms is a matter of will power, is a misconception according to Dr. Smith. He maintained that this was one of the most potent causes of increasing nervous tension. The solution of the problems of the neurotic person, he cautioned physicians, lay in unhurried examinations, humane understanding of social problems, tact and a frank recognition of the patient's inability to understand his own difficulties.

Science News-Letter, May 21, 1927

Why Popularize Science?

By JULIAN HUXLEY

Science herself is over-specialized: her right hand knoweth not what her left hand doeth; scientists in bulk inhabit a city of water-tight compartments; but by the irony of the situation, the compartments are not quite water-tight, and each investigator finds that the results of someone else's investigations sooner or later percolate into his own place, and often transform the whole aspect of his interior in such a way that much of his former descriptions turn out to be useless.

Then there are insistent prophets who foretell the breakdown of scientific knowledge under its own weight; and there is no doubt that the burden of mere fact is enormous. As greatest difficulty of all, however, there remains the relation between scientific discovery and general thought. It takes so long for ideas to filter across in their true form; so often what comes through is the idea without its background—in other words, quite a different idea. But there is even more than that. Whenever the lag in communication between science and general thought grows considerable, whenever science, through laziness, pride, or pedantry, fails to make herself understood, and whenever the public, through laziness, stupidity or prejudice, fails to understand, then we shall proceed to a lamentable divorce. It will not be merely the results of science which will not be assimilated, but science herself and the spirit of science will not be understood; and scientists will become an isolated caste in a half-hostile environment.

—Quotation from *Essays in Popular Science*—Knopf.

Science News-Letter, May 21, 1927

Anti-Evolution in Florida

By making a slight last-minute concession, the Fundamentalist forces engineering the anti-evolution bill now before the state legislature have succeeded in getting it past the House by a decisive vote, 67 to 24. As introduced, the bill categorically forbade the teaching of any theory of human origin or the creation of the world not in harmony with Genesis, but before it came to a vote its author, Representative Stalnaker, assented to an amendment providing that the doctrine is not to be taught "as a fact." The measure now goes to the Senate for further consideration.

Science News-Letter, May 21, 1927

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SCIENCE SERVICE

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Anniversaries of Science

May 26, 1919—U. S. seaplane NC-4 arrived at Lisbon, completing first Atlantic crossing by air.

On the evening of May 16, the three seaplanes leaped into the air for the long flight to the Azores. As they sailed along, a destroyer below would send up a column of smoke by day and flash searchlights or star shells at night, so that the men in the air might know where they were. Thus the bold airmen flew over the station ships below, one by one. They were nearing the end of the jump to the Azores, 1,380 miles long, when they ran into a thick fog. The pilots could see nothing. All about them was this thick mist. They could not climb up out of it. Everything depended on cool heads and stout hearts. At last, the NC-4 managed to climb out of the fog and arrived at Horta in the Azores, fifteen hours and thirteen minutes after she had left Newfoundland. The NC-1 and NC-3 both had to alight on the water. Lieutenant-Commander Bellinger and his crew were taken off the NC-3 by a steamer and landed at Horta. The NC-1 had been badly pounded by the waves, and her crew worked desperately to keep her afloat before they were taken off.

The men of the NC-3 had a terrible experience. All during the night a rain-storm beat upon her and all the next day she had to face a gale. She could not tell where she might be found; her wireless apparatus could be used only in the air because the current was generated by a little propeller driven by the wind as she sped along. As for seeing her—she was about as easy to see on the ocean as a speck of dust on a plate-glass window. High seas began to break over her; the ribs of the lower wings cracked and the fabric that covered them split. Finally, the elevator was swept off. The hull leaked badly, so that the pumps had to be kept going to keep the ship afloat. With a shout, the men greeted the sun, which all at once came out. Thirty-five miles away they saw a mountain. In a desperate attempt to reach land they let the wind blow the NC-3 along as it would a sailboat. Night fell again. Still the heavy sea tossed the frail vessel about, and still the storm raged. By daylight nothing was left of the lower wings except a few of the heavier beams. Early in the morning San Miguel hove in sight. Seven miles off Ponta Delgada, the battered NC-3 was sighted. A destroyer steamed out at full speed to help her. But the men on the NC-3, for all the hardships that they had endured, would not give up the ship. They brought the NC-3 into the harbor under her own power, "taxiing" over the waves, a mere floating wreck. They had been in the water fifty-three hours, making desperate efforts to reach port, and had suffered hardships. Their sandwiches had become soaked with sea water and could not be eaten. They had only a few pieces of chocolate. Rusty water from the radiator was all they had to drink.

Only the NC-4, commanded by Read, was fit to keep on, and keep on she did. Early in the morning of May 26, 1919, she left Ponta Delgada, to which she had meanwhile flown from Horta, and started on the 891-mile flight to Lisbon. She made the run in nine hours and forty-three minutes. All Lisbon cheered, blew whistles and waved handkerchiefs

and flags when she came into the harbor.

—Kaempffert: *A Popular History of American Invention*.

May 28, 585 B. C.—Most probable date of solar eclipse which, legend and accounts of ancient writers say, was predicted by Thales of Miletus, earliest Greek astronomer. It is possible that he could have predicted an eclipse for that year. Whether the eclipse actually occurred on the predicted date cannot now be absolutely proved.

Science News-Letter, May 21, 1927

PHYSIOLOGY

Blood Speed Same

The average time required for the blood to circulate from one arm around through the circulatory system to the other arm is eighteen seconds. This rate of flow is practically constant for all ages. Such is the report by Dr. Hermann L. Blumgart and Soma Weiss of the Thorndike Memorial Laboratory, Harvard Medical School, which appeared in a recent issue of *The Journal of Clinical Investigation*.

In order to determine the velocity of blood flow in man, an active deposit of radium was injected into the cubital vein of one arm and the time counted, by stop watch, for the active radium to reach the arterial vessels about the elbow of the other arm. A sensitive apparatus detected the active radium deposit the instant it arrived in the arterial vessels of the elbow of the opposite arm.

Measurements of the rate of blood flow were made on fifty-three normal male individuals ranging in age from fifteen to seventy-five. The average arm to arm circulation for these individuals, regardless of age, was found to be eighteen seconds.

Science News-Letter, May 21, 1927

ENTOMOLOGY

Planes Aid Flood Victims

From boll weevil control to relief work in the Mississippi flood area has been the long "hop" taken by government planes under the direction of a government entomologist. His work temporarily halted by the inundation of 2,000,000 acres of cotton land, B. H. Coad, U. S. entomologist in charge of cotton insect investigations, has turned his attention from boll weevils to flood victims. Instead of bringing death from the air to the insect pest, he is bringing life to the inhabitants of the flooded regions about Scott, Mississippi. The planes are those used by the Delta Entomological Laboratory at Tallulah, Louisiana, in experimental spraying of the cotton fields.

Science News-Letter, May 21, 1927

PSYCHOLOGY

Rats Good Swimmers

White rats are expert swimmers, but they swim with the one idea of getting to dry land. This is shown by experiments conducted at Harvard by Prof. William McDougall and his son Kenneth D. McDougall.

Results of the experiments, which appear in the *Journal of Comparative Psychology*, show that as soon as a white rat is placed in water, he begins to make strenuous efforts to get out.

It is not until about three weeks after birth that the rat swims well. After three weeks, a rat placed in a tank of water for the first time swims perfectly, but always with the one purpose of finding some means of escape from the water.

If there is no exit from the tank, and if the walls are too smooth for the rat to climb he will sooner or later dive to the bottom voluntarily and explore the walls around the bottom. If an underwater exit is found the rat will at once swim through this exit. Even when two barriers were so placed as to make diving difficult no rat out of 200 failed to learn to dive at the required places.

Science News-Letter, May 21, 1927

PSYCHOLOGY

The Ways of Psychologists

This week's prize winning poem in the Science Service scientific poetry contest.

Psychologists of years gone by
Would sit at home and rest,
And contemplate with inward eye
The mind they knew the best.

A generation later came
The electric instrument,
Which ardent devotees laid claim
Would show a person's bent.

They thought the time it takes to click
A telegraphic key,
Would mark the slow ones from the
quick
As fast as eye can see.

The mental testers next displayed
Some questions on a page,
Directions, too, which when obeyed
Would tell your mental age.

At first they picked out stupid folk,
And then the problem child,
And now the psychologic joke
Is "tests for pre-school child."

And in the end they hope to know
The way that humans think,
And how to make a genius grow,
And what drives men to drink.

—Mrs. K. M. Bangham Bridges.

Science News-Letter, May 21, 1927

Summer is Nature's Own Time—

The Science News-Letter Is Therefore Pleased To Announce

SPECIAL OUT-OF-DOORS PAGES

These nature pages will be prepared by leading nature-study and outdoors experts under the supervision of the Coordinating Council on Nature Activities, an organization that brings together leading societies and institutions interested in a proper understanding of the great outdoors. The pages, full of wood lore and useful interpretation of forest, field and garden, will appear during June and August.

Other News-Letter Features Scheduled for May, June and July

Nature Ramblings (a weekly nature note by Dr. Frank Thone).

Star Charts of Summer Heavens (an explanation of the stars by James Stokley).

How Butterflies and Other Insects Smell.

Europe's Total Eclipse of the Sun (explained and reported by Prof. S. A. Mitchell, leader of America's only expedition).

How to Observe the Moon's Total Eclipse to occur in June.

Venomous Serpents and Science's Protection Against Them (an authoritative article by Dr. Raymond L. Ditmars, of the New York Zoological Gardens).

Medicine's Latest Achievements and Marvels.

Science Helps Coaches to Train Winning Athletes (the first authoritative statement of the new investigations of sprinting by the famous English athlete-scientist and Nobel prize winner, Prof. A. V. Hill).

Man's Age and Evolution in the Light of New Discoveries (raising the question as to whether ancient man lived in America).

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